```
                                  C 10



MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
```

```
_$



Va
--
00
00
7F
7F
7F
7F
7F
7F
7F
7F
7F
7F
7F
7F
7F
7F
```

```
**FILE**ID**MMGLKWULW                                    I 7



MM      MM  MM      MM    GGGGGGGG  LL          KK      KK  WW      WW  UU      UU  LL          WW      WW
MM      MM  MM      MM    GGGGGGGG  LL          KK      KK  WW      WW  UU      UU  LL          WW      WW
MMMM  MMMM  MMMM  MMMM  GG          LL          KK      KK  WW      WW  UU      UU  LL          WW      WW
MMMM  MMMM  MMMM  MMMM  GG          LL          KK      KK  WW      WW  UU      UU  LL          WW      WW
MM  MM  MM  MM  MM  MM  GG          LL          KK    KK    WW      WW  UU      UU  LL          WW      WW
MM  MM  MM  MM  MM  MM  GG          LL          KK    KK    WW      WW  UU      UU  LL          WW      WW
MM      MM  MM      MM  GG          LL          KKKKKK      WW      WW  UU      UU  LL          WW      WW
MM      MM  MM      MM  GG          LL          KKKKKK      WW      WW  UU      UU  LL          WW      WW
MM      MM  MM      MM  GG  GGGGGG  LL          KK    KK    WW  WW  WW  UU      UU  LL          WW  WW  WW
MM      MM  MM      MM  GG  GGGGGG  LL          KK    KK    WW  WW  WW  UU      UU  LL          WW  WW  WW
MM      MM  MM      MM  GG      GG  LL          KK      KK  WWWW  WWWW  UU      UU  LL          WWWW  WWWW      ....
MM      MM  MM      MM  GG      GG  LL          KK      KK  WWWW  WWWW  UU      UU  LL          WWWW  WWWW      ....
MM      MM  MM      MM    GGGGGG    LLLLLLLLLL  KK      KK  WW      WW  UUUUUUUUUU  LLLLLLLLLL  WW      WW      ....
MM      MM  MM      MM    GGGGGG    LLLLLLLLLL  KK      KK  WW      WW  UUUUUUUUUU  LLLLLLLLLL  WW      WW      ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

Table of contents

```
     (2)        52          DECLARATIONS
     (2)        56          MACROS
     (4)       232          DATA STORAGE AND MESSAGE STRINGS
     (7)       375          INITIALIZATION
     (8)       441          LOCK AND UNLOCK FROM WORKING SET TEST
     (9)       462          FORCE ERRORS IN LOCK/UNLOCK FROM WORKING SET
     (10)      497          TEST/FORCE ERRORS IN LOCK/UNLOCK GLOBAL SECTS
     (11)      547          TEST/FORCE ERRORS IN LOCK/UNLOCK GLOBAL SECTS
     (12)      627          SUBROUTINES TO CALL THE SERVICES
     (16)      774          MISCELLANEOUS SUBROUTINES
```

```
0000     ;
0000     ;               MEMORY MANAGEMENT SERVICES TEST #6
0000     ;
0000     ;
0000             .TITLE  MMGLKWULW - TEST OF $LKWSET/$ULWSET SYSTEM SERVICES
0000             .IDENT  'V04-000'
0000     ;
0000     ;****************************************************************************
0000     ;*                                                                          *
0000     ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
0000     ;*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
0000     ;*  ALL RIGHTS RESERVED.                                                    *
0000     ;*                                                                          *
0000     ;*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
0000     ;*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
0000     ;*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
0000     ;*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
0000     ;*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
0000     ;*  TRANSFERRED.                                                            *
0000     ;*                                                                          *
0000     ;*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
0000     ;*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
0000     ;*  CORPORATION.                                                            *
0000     ;*                                                                          *
0000     ;*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
0000     ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
0000     ;*                                                                          *
0000     ;*                                                                          *
0000     ;****************************************************************************
0000
0000     ;++
0000     ; FACILITY: USER MODE MEMORY MANAGEMENT SERVICES TEST
0000     ;
0000     ; ABSTRACT: THIS SET OF ROUTINES TESTS THE MEMORY MANAGEMENT SERVICES
0000     ;
0000     ; ENVIRONMENT: USER MODE DIAGNOSTIC
0000     ;
0000     ; AUTHOR: PETER H. LIPMAN        , CREATION DATE: 6-JAN-77
0000     ;
0000     ; MODIFIED BY:
0000     ;
0000     ;       V02-012 SHZ0005         Stephen Zalewski        20-Aug-1980
0000     ;               Added further tests to system services tested in this
0000     ;               program.  Also incorporated program into MMG test
0000     ;               package.
0000
0000     ;       V02-012 TSC0005         Thomas Clark            25-Jul-1980
0000     ;               Added further tests to system services tested in this
0000     ;               program.
0000     ;
```

```
0000          .SBTTL  DECLARATIONS
0000  ;
0000  ; INCLUDE FILES:
0000  ;
0000          .SBTTL  MACROS
0000  ;
0000  ; MACROS:
0000  ;
0000          .MACRO  LIST
0000          .LIST   MEB
0000          .ENDM   LIST
0000
0000          .MACRO  NLIST
0000          .NLIST  MEB
0000          .ENDM   NLIST
0000
0000          .MACRO  CRETVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000                          INADR=W^INRANGE,RETADR=W^RETRANGE
0000          LIST
0000                  .IF     NB,STARTVA
0000                  MOVL    STARTVA,W^INRANGE
0000                  .ENDC
0000                  .IF     NB,ENDVA
0000                  MOVL    ENDVA,W^INRANGE+4
0000                  .ENDC
0000                  MOVZWL  STATUS,R3
0000                  MOVAL   INADR,R0
0000                  MOVAL   RETADR,R1
0000                  BSBW    CRETVASUBR
0000          NLIST
0000          .ENDM   CRETVA
0000
0000          .MACRO  DELTVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000                          INADR=W^INRANGE,RETADR=W^RETRANGE
0000          LIST
0000                  .IF     NB,STARTVA
0000                  MOVL    STARTVA,W^INRANGE
0000                  .ENDC
0000                  .IF     NB,ENDVA
0000                  MOVL    ENDVA,W^INRANGE+4
0000                  .ENDC
0000                  MOVZWL  STATUS,R3
0000                  MOVAL   INADR,R0
0000                  MOVAL   RETADR,R1
0000                  BSBW    DELTVASUBR
0000          NLIST
0000          .ENDM   DELTVA
0000
0000          .MACRO  EXPREG  PAGCNT,REGION=#0,STATUS=S^#SS$_NORMAL,-
0000                  RETADR=W^RETRANGE
0000          LIST
0000                  MOVZWL  STATUS,R3
0000                  MOVL    PAGCNT,R4
0000                  MOVAL   RETADR,R1
0000                  .IF     IDN,<REGION>,<#0>
0000                  CLRL    R5
0000                  .IFF
```

```
0000                    MOVL    REGION,R5
0000                    .ENDC
0000                    BSBW    EXPREGSUBR
0000            NLIST
0000            .ENDM   EXPREG
0000
0000            .MACRO  LKWSET STARTVA,ENDVA,STATUS=S^#SS$_WASCLR,-
0000                            INADR=W^INRANGE,RETADR=W^RETRANGE
0000            LIST
0000                    .IF     NB,STARTVA
0000                    MOVL    STARTVA,W^INRANGE
0000                    .ENDC
0000                    .IF     NB,ENDVA
0000                    MOVL    ENDVA,W^INRANGE+4
0000                    .ENDC
0000                    MOVZWL  STATUS,R3
0000                    MOVAL   INADR,R0
0000                    MOVAL   RETADR,R1
0000                    BSBW    LKWSETSUBR
0000            NLIST
0000            .ENDM   LKWSET
0000
0000            .MACRO  ULWSET STARTVA,ENDVA,STATUS=S^#SS$_WASSET,-
0000                            INADR=W^INRANGE,RETADR=W^RETRANGE
0000            LIST
0000                    .IF     NB,STARTVA
0000                    MOVL    STARTVA,W^INRANGE
0000                    .ENDC
0000                    .IF     NB,ENDVA
0000                    MOVL    ENDVA,W^INRANGE+4
0000                    .ENDC
0000                    MOVZWL  STATUS,R3
0000                    MOVAL   INADR,R0
0000                    MOVAL   RETADR,R1
0000                    BSBW    ULWSETSUBR
0000            NLIST
0000            .ENDM   ULWSET
0000
0000    ;*****************************************************************************
0000    ;       THIS MACRO USED TO CREATE PERMANENT GLOBAL SECTIONS.  THE FILE NAME
0000    ;       AND GBL SECTION DEVICE NAME ARE DECLARED INDEPENDANTLY OF THIS MACRO
0000    ;       AND ARE PUSHED ONTO THE STACK MANUALY BEFORE THE $CRMPSC SERVICE IS
0000    ;       CALLED.
0000    ;         ALSO NOTE THE TEMPORARY FIX LOCATED AT THE BOTTOM OF THE MACRO.  THE
0000    ;       FIX IS NEEDED BECAUSE THE LAST GLOBAL SECTION MAY NOT HAVE BEEN DELETED
0000    ;       BY THE TIME THE NEXT MAPPED SECTION IS CREATED.  IN THIS CASE THE
0000    ;       RETURNED ERROR IS TRAPPED AND THE SECTION IS REMAPPED UNTIL THE
0000    ;       SUCCESS CODE IS RETURNED.  THIS BUG IS SLATED TO BE FIXED.  WHEN THAT
0000    ;       IS ACCOMPLISHED REFER TO THE COMMENTS ABOVE THE FIX TO DETERMINE WHAT
0000    ;       LINES SHOULD BE REMOVED TO DELETE THE PATCH.
0000    ;*****************************************************************************
0000    ;
0000            .MACRO  CREMAPSEC -
0000                    STARTVA         ,-
0000                    ENDVA           ,-
0000                    STATUS=S^#SS$_NORMAL ,-
0000                    INADR=<W^INRANGE>,-             ;INPUT RANGE
```

```
0000                           RETADR=<W^RETRANGE>  ,-           ;RETURN RANGE
0000                           FLAGS=#0             ,-           ;SECTION FLAGS
0000                           GSDNAM=<W^GBLSECNAM>,-            ;GLOBAL SECTION NAME
0000                           RELPAG=#0            ,-           ;RELATIVE PAGE
0000                           FILNAM=<W^FILENAME>,-             ;FILE NAME
0000                           PAGCNT=#0            ,-           ;MAX SIZE OF SECTION
0000                           VBN=#0               ,-           ;STARTING WIRT BLK NO. IN FILE
0000                           ?L1
0000                   LIST
0000                           .IF     NB,STARTVA
0000                           MOVL    STARTVA,W^INRANGE
0000                           .ENDC
0000                           .IF     NB,ENDVA
0000                           MOVL    ENDVA,W^INRANGE+4
0000                           .ENDC
0000                           MOVZWL  STATUS,R3
0000          L1:
0000                           PUSHL   VBN
0000                           PUSHL   PAGCNT
0000                           $PUSHADR        FILNAM
0000                           PUSHL   RELPAG
0000                           $PUSHADR        GSDNAM
0000                           PUSHL   FLAGS
0000                           $PUSHADR        RETADR
0000                           $PUSHADR        INADR
0000                           CALLS   #8,LIB$_CREMAPSEC
0000          ;*******
0000          ;IN ORDER TO DELTE THE PATCH MENTIONED ABOVE SIMPLY REMOVE THE LINES FROM
0000          ;HERE TO THE NEXT SET OF ASTERICS.
0000          ;
0000                           CMPL    #^X1828A,R0               ;IF PREVIOUS GBL SECTION HASN'T
0000                           BEQL    L1                        ;BEEN DELETED TRY CREMAPSEC AGAIN.
0000          ;*******
0000                           MOVAL   W^CRMPSCERR,R1
0000                           BSBW    CHECK1
0000                   NLIST
0000                   .ENDM   CREMAPSEC
0000
0000                   .MACRO  RANGECHK ONOROFF
0000                   LIST
0000                   .IF     IDN <ONOROFF>,<OFF>
0000                           BICL    #CTL$M_RNGCHK,W^CTLFLG
0000                   .IFF
0000                           BISL    #CTL$M_RNGCHK,W^CTLFLG
0000                   .ENDC
0000                   NLIST
0000                   .ENDM   RANGECHK
```

```
                0000   214 ;
                0000   215 ; EQUATED SYMBOLS:
                0000   216 ;
                0000   217          $SSDEF
                0000   218          $SECDEF
                0000   219          $PRTDEF
                0000   220          $GBLINI
                0000   221          $VIELD  CTL,0,<-                         ;DEFINE CONTROL BITS IN R3
                0000   222                  <MEMLOOP,,MASK>,-                ;LOOP IN MEMORY WRITE LOOP
                0000   223                  <TSTLOOP,,MASK>,-                ;REDO ENTIRE TEST FROM TOP
                0000   224                  <PIDMSG,,MASK>,-                 ;PUT PROCESS ID IN EACH TYPEOUT
                0000   225                  <RNGCHK,,MASK>-                  ;ON IF CHECKING RETURN RANGE
                0000   226          >
       00000010 0000   227          PRT$C_NONE=1@4
                0000   228 ;
                0000   229 ; OWN STORAGE:
                0000   230 ;
```

```
                          0000   232            .SBTTL  DATA STORAGE AND MESSAGE STRINGS
                      00000000   233            .PSECT  DATA0,PAGE,WRT,NOEXE
                          0000   234 INRANGE:
              00000008    0000   235            .BLKL   2
                          0008   236 RETRANGE:
              00000010    0008   237            .BLKL   2
              00000006    0010   238 CTLFLG: .LONG      CTL$M_TSTLOOP!CTL$M_PIDMSG
              00000018    0014   239 SAVEND: .BLKL      1
              0000001C    0018   240 PID:    .BLKL      1                                   ;PROCESS ID
                          001C   241 MAXPASSCNT:
              00000003    001C   242            .LONG   3                                   ;NUMBER OF PASSES TO RUN
                          0020   243 PASSCNT:
              00000024    0020   244            .BLKL   1                                   ;PASS COUNTER
                          0024   245 PREVPROT:
                          0024   246 FAB:       $FAB    FAC=PUT, FNA=OUTNAMADR, FNS=OUTNAMSIZ ;FAB FOR OUTPUT
                          0074   247 RAB:       $RAB    FAB=FAB                             ;RECORD ACCESS BLOCK FOR OUTPUT
              000000BC    00B8   248 MSGLEN: .BLKL      1                                   ;RETURN LENGTH FROM FAO
     000000DA'000000A0'   00BC   249 MSGBUFD:.LONG      MSGBUFSIZ,MSGBUF                    ;MESSAGE BUFFER DESCRIPTOR
                          00C4   250 PIDMSGD:
     000000D6'00000004'   00C4   251            .LONG   MSGBUF-PIDMSG,PIDMSG
                          00CC   252 ;
                          00CC   253 ; ***** DO NOT SEPARATE OR REORDER THE FOLLOWING LINES
                          00CC   254 ;
                          00CC   255 MSGBUFID:
                    0A 0D 00CC   256 CRLF:      .BYTE   ^015,^012
  20 53 53 45 43 4F 52 50 00CE   257            .ASCII  $PROCESS $
              20 20 20 20 00D6   258 PIDMSG: .ASCII     $    $
              0000017A    00DA   259 MSGBUF: .BLKB      160                                 ;MESSAGE BUFFER USED BY FAO
              000000A0    017A   260            MSGBUFSIZ=.-MSGBUF
                          017A   261 ;
                          017A   262 ; ***** DO NOT SEPARATE OR REORDER THE PRECEEDING LINES
                          017A   263 ;
                          017A   264
```

```
                             00000000   266             .PSECT  CODE,PAGE,NOWRT,EXE
                                 0000   267
                                 0000   268 OUTNAMADR:
      54 55 50 54 55 4F 24 53 59 53  0000   269             .ASCII  /SYS$OUTPUT/
                           0000000A  000A   270             OUTNAMSIZ=.-OUTNAMADR
                                 000A   271
                                 000A   272 CRETVAERRADR:
52 52 45 20 41 56 54 45 52 43 2F 21  000A   273             .ASCII  $!/CRETVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  0016
41 57 20 53 55 54 41 54 53 20 2C 4C  0022
4C 55 4F 48 53 20 2C 4C 58 21 20 53  002E
            4C 58 21 20 45 42 20 44  003A
21 20 3D 20 52 44 41 4E 49 09 2F 21  0042   274             .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  004E
20 4C 58 21 20 3D 20 52 44 41 54 45  005A
               2F 21 4C 58 21 20 2D  0066
                           00000063  006D   275             CRETVAERRSIZ=.-CRETVAERRADR
                                 006D   276
                                 006D   277 DELTVAERRADR:
52 52 45 20 41 56 54 4C 45 44 2F 21  006D   278             .ASCII  $!/DELTVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  0079
41 57 20 53 55 54 41 54 53 20 2C 4C  0085
4C 55 4F 48 53 20 2C 4C 58 21 20 53  0091
            4C 58 21 20 45 42 20 44  009D
21 20 3D 20 52 44 41 4E 49 09 2F 21  00A5   279             .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  00B1
20 4C 58 21 20 3D 20 52 44 41 54 45  00BD
               2F 21 4C 58 21 20 2D  00C9
                           00000063  00D0   280             DELTVAERRSIZ=.-DELTVAERRADR
                                 00D0   281
                                 00D0   282 CRMPSCERRADR:
52 52 45 20 43 53 50 4D 52 43 2F 21  00D0   283             .ASCII  $!/CRMPSC ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  00DC
41 57 20 53 55 54 41 54 53 20 2C 4C  00E8
4C 55 4F 48 53 20 2C 4C 58 21 20 53  00F4
            4C 58 21 20 45 42 20 44  0100
21 20 3D 20 52 44 41 4E 49 09 2F 21  0108   284             .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  0114
20 4C 58 21 20 3D 20 52 44 41 54 45  0120
               2F 21 4C 58 21 20 2D  012C
                           00000063  0133   285             CRMPSCERRSIZ=.-CRMPSCERRADR
                                 0133   286
                                 0133   287 LKWSETERRADR:
52 52 45 20 54 45 53 57 4B 4C 2F 21  0133   288             .ASCII  $!/LKWSET ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  013F
41 57 20 53 55 54 41 54 53 20 2C 4C  014B
4C 55 4F 48 53 20 2C 4C 58 21 20 53  0157
            4C 58 21 20 45 42 20 44  0163
21 20 3D 20 52 44 41 4E 49 09 2F 21  016B   289             .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  0177
20 4C 58 21 20 3D 20 52 44 41 54 45  0183
               2F 21 4C 58 21 20 2D  018F
                           00000063  0196   290             LKWSETERRSIZ=.-LKWSETERRADR
                                 0196   291
                                 0196   292 ULWSETERRADR:
52 52 45 20 54 45 53 57 4C 55 2F 21  0196   293             .ASCII  $!/ULWSET ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  01A2
```

```
41 57 20 53 55 54 41 54 53 20 2C 4C  01AE
4C 55 4F 48 53 20 2C 4C 58 21 20 53  01BA
            4C 58 21 20 45 42 20 44  01C6
21 20 3D 20 52 44 41 4E 49 09 2F 21  01CE   294         .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  01DA
20 4C 58 21 20 3D 20 52 44 41 54 45  01E6
               2F 21 4C 58 21 20 2D  01F2
                           00000063  01F9   295         ULWSETERRSIZ=.-ULWSETERRADR
                                     01F9   296
                                     01F9   297 EXPREGERRADR:
52 52 45 20 47 45 52 50 58 45 2F 21  01F9   298         .ASCII  $!/EXPREG ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  0205
41 57 20 53 55 54 41 54 53 20 2C 4C  0211
4C 55 4F 48 53 20 2C 4C 58 21 20 53  021D
            4C 58 21 20 45 42 20 44  0229
20 3D 20 54 4E 43 47 41 50 09 2F 21  0231   299         .ASCII  $!/     PAGCNT = !SL, REGION = P!UB SPACE, $
20 4E 4F 49 47 45 52 20 2C 4C 53 21  023D
45 43 41 50 53 20 42 55 21 50 20 3D  0249
                              20 2C  0255
4C 58 21 20 3D 20 52 44 41 54 45 52  0257   300         .ASCII  $RETADR = !XL - !XL!/$
            2F 21 4C 58 21 20 2D 20  0263
                           00000072  026B   301         EXPREGERRSIZ=.-EXPREGERRADR
                                     026B   302
                                     026B   303 RANGERRADR:
4E 41 52 20 4E 52 55 54 45 52 2F 21  026B   304         .ASCII  $!/RETURN RANGE ERROR - LOCATION = !XL$
4C 20 2D 20 52 4F 52 52 45 20 45 47  0277
58 21 20 3D 20 4E 4F 49 54 41 43 4F  0283
                                 4C  028F
21 20 3D 20 52 44 41 4E 49 09 2F 21  0290   305         .ASCII  $!/     INADR = !XL - !XL, RETADR = !XL - !XL!/$
45 52 20 2C 4C 58 21 20 2D 20 4C 58  029C
2D 20 4C 58 21 20 3D 20 52 44 41 54  02A8
            2F 21 4C 58 21 20        02B4
                           0000004F  02BA   306         RANGERRSIZ=.-RANGERRADR
                                     02BA   307
                                     02BA   308 IDMSGADR:
4E 41 4D 20 59 52 4F 4D 45 4D 2F 21  02BA   309         .ASCII  $!/MEMORY MANAGEMENT SERVICES TEST #6 (LKWULW), PASS !UL!/$
56 52 45 53 20 54 4E 45 4D 45 47 41  02C6
36 23 20 54 53 45 54 20 53 45 43 49  02D2
50 20 2C 29 57 4C 55 57 4B 4C 28 20  02DE
         2F 21 4C 55 21 20 53 53 41  02EA
                           00000039  02F3   310         IDMSGSIZ=.-IDMSGADR
                                     02F3   311
                                     02F3   312 RUN1_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21  02F3   313         .ASCII  $!/   *****   TEST WILL NOW BE RUN USING REGULAR VA SPACE   *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20  02FF
53 55 20 4E 55 52 20 45 42 20 57 4F  030B
20 52 41 4C 55 47 45 52 20 47 4E 49  0317
2A 20 20 20 45 43 41 50 53 20 41 56  0323
                        2A 2A 2A 2A  032F
                           20 2F 21  0333   314         .ASCII  $!/ $
                           00000043  0336   315         RUN1_MSGSIZ=.-RUN1_MSGADR
                                     0336   316
                                     0336   317 RUN2_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21  0336   318         .ASCII  $!/   *****   TEST WILL NOW BE RUN USING PERM GBL SECTIONS   *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20  0342
53 55 20 4E 55 52 20 45 42 20 57 4F  034E
4C 42 47 20 4D 52 45 50 20 47 4E 49  035A
```

```
20 20 20 53 4E 4F 49 54 43 45 53 20  0366
               2A 2A 2A 2A 2A  0372
                     20 2F 21  0377     319             .ASCII  $!/ $
                     00000044  037A     320             RUN2_MSGSIZ=.-RUN2_MSGADR
                               037A     321
                               037A     322 RUN3_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21  037A     323             .ASCII  $!/   *****   TEST WILL NOW BE RUN USING PFN MAPPING   *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20  0386
53 55 20 4E 55 52 20 45 42 20 57 4F  0392
50 50 41 4D 20 4E 46 50 20 47 4E 49  039E
   2A 2A 2A 2A 2A 20 20 20 47 4E 49  03AA
                     20 2F 21  03B5     324             .ASCII  $!/ $
                     0000003E  03B8     325             RUN3_MSGSIZ=.-RUN3_MSGADR
                               03B8     326
                               03B8     327 PIDCTLADR:
                     4C 55 21  03B8     328             .ASCII  $!UL$
                     00000003  03BB     329             PIDCTLSIZ=.-PIDCTLADR
                               03BB     330
                               03BB     331 GBLSECNAMADR:
            54 53 54 47 4D 4D  03BB     332             .ASCII  $MMGTST$
                     00000006  03C1     333             GBLSECNAMSIZ=.-GBLSECNAMADR
                               03C1     334
                               03C1     335 FILENAMEADR:
      54 41 44 2E 54 53 54 47 4D 4D  03C1     336             .ASCII  $MMGTST.DAT$
                     0000000A  03CB     337             FILENAMESIZ=.-FILENAMEADR
                               03CB     338
```

```
                   03CB   340 ;
                   03CB   341 ; STRING DESCRIPTORS
                   03CB   342 ;
                   03CB   343         .ALIGN  LONG
                   03CC   344
                   03CC   345 CRETVAERR:
0000000A'00000063  03CC   346         .LONG   CRETVAERRSIZ,CRETVAERRADR
                   03D4   347 DELTVAERR:
0000006D'00000063  03D4   348         .LONG   DELTVAERRSIZ,DELTVAERRADR
                   03DC   349 CRMPSCERR:
000000D0'00000063  03DC   350         .LONG   CRMPSCERRSIZ,CRMPSCERRADR
                   03E4   351 EXPREGERR:
000001F9'00000072  03E4   352         .LONG   EXPREGERRSIZ,EXPREGERRADR
                   03EC   353 LKWSETERR:
00000133'00000063  03EC   354         .LONG   LKWSETERRSIZ,LKWSETERRADR
                   03F4   355 ULWSETERR:
00000196'00000063  03F4   356         .LONG   ULWSETERRSIZ,ULWSETERRADR
                   03FC   357 RANGERR:
0000026B'0000004F  03FC   358         .LONG   RANGERRSIZ,RANGERRADR
                   0404   359 IDMSG:
000002BA'00000039  0404   360         .LONG   IDMSGSIZ,IDMSGADR
                   040C   361 RUN1_MSG:
000002F3'00000043  040C   362         .LONG   RUN1_MSGSIZ,RUN1_MSGADR
                   0414   363 RUN2_MSG:
00000336'00000044  0414   364         .LONG   RUN2_MSGSIZ,RUN2_MSGADR
                   041C   365 RUN3_MSG:
0000037A'0000003E  041C   366         .LONG   RUN3_MSGSIZ,RUN3_MSGADR
                   0424   367 PIDCTL:
000003B8'00000003  0424   368         .LONG   PIDCTLSIZ,PIDCTLADR
                   042C   369 GBLSECNAM:
000003BB'00000006  042C   370         .LONG   GBLSECNAMSIZ,GBLSECNAMADR
                   0434   371 FILENAME:
000003C1'0000000A  0434   372         .LONG   FILENAMESIZ,FILENAMEADR
                   043C   373
```

```
                           043C        .SBTTL  INITIALIZATION
                           043C ;*************************************************************************
                           043C ;PROGRAM DESCRIPTION:
                           043C ;
                           043C ;              THIS PROGRAM TESTS THE FOLLOWING SYSTEM SERVICES:
                           043C ;                   $LKWSET, $ULWSET
                           043C ;
                           043C ;              THE SYSTEM SERVICES ARE TESTED IN THE FOLLOWING MANNER.  THE PROGRAM
                           043C ;           IS DIVIDED INTO THREE SEPERATE SECTIONS.  THE FIRST SECTION DOES
                           043C ;           SEVERAL LOCK AND UNLOCK TESTS  AND THEN FORCES POSSIBLE ERROR PATHS
                           043C ;           FOR THE SYSTEM SERVICES.  THE NEXT SECTION DOES SEVERAL LOCK AND
                           043C ;           UNLOCK SYSTEM SERVICE CALLS FOR GLOBAL SECTIONS.  FINALLY, THE THIRD
                           043C ;           SECTION DOES THE SAME TESTS, ONLY USING PFN MAPPED SECTIONS.  EACH
                           043C ;           OF THE SECTIONS IS RUN THREE TIMES, AND A MESSAGE IS SENT TO THE
                           043C ;           OPR AT THE START OF EACH SECTION NOTIFYING HIM AS TO WHICH SECTION
                           043C ;           OF TESTS IS ABOUT TO BE RUN.
                           043C ;
                           043C ;              REFER TO MASD$:[MMGTST.COM]MMGTST.RAP FOR FURTHER INFORMATION
                           043C ;           REGARDING JUST HOW COMPLETELY THE ABOVE MENTIONED SYSTEM SERVICES
                           043C ;           ARE TESTED BY THIS PROGRAM.
                           043C ;
                           043C ;              REFER TO MASD$:[MMGTST.COM]MMGTST.RAP FOR FURTHER INFORMATION
                           043C ;           REGARDING JUST HOW COMPLETELY THE ABOVE MENTIONED SYSTEM SERVICES
                           043C ;           ARE TESTED BY THIS PROGRAM.
                           043C ;
                           043C ;           *NOTE:
                           043C ;              THERE IS A BUG IN $CRMPSC THAT WILL BE FIXED IN THE FUTURE.  UNTIL
                           043C ;           THIS FIX TAKES PLACE THERE AREA TEMPORARY PATCH'S LOCATED AT THE END
                           043C ;           OF THE CREMAPSEC MACRO AND MAKVA MACRO WHICH CIRCUMVENT THIS
                           043C ;           PROBLEM.  UPON CORRECTION OF THIS BUG REFER TO THESE ABOVE MENTIONED
                           043C ;           MACROS TO FIND OUT HOW TO REMOVE THESE TEMPORARY PATCHES.
                           043C ;              ALSO, THE FILE MMGTST.DAT, WHICH IS CREATED BY RUNNING MMGCRTFIL.MAR,
                           043C ;           IS NECESSARY TO RUN THIS PROGRAM AS IT IS REFERENCED BY CREMAPSEC.
                           043C ;
                           043C ;           *PRIVILEGES:
                           043C ;              IN ORDER TO RUN THIS PROGRAM YOU MUST HAVE IN YOUR POSSESION
                           043C ;           THE PRIVILEGES PRMGBL AND PFNMAP.
                           043C ;*************************************************************************
                           043C ;
                           043C ; START HERE
                           043C ;
                     0000  043C START:  .WORD    0                                 ;ENTRY MASK
                           043E         $OPEN    W^FAB                             ;OPEN THE FILE ''$OUTPUT''
              0E 50   E9   0449         BLBC     R0,10$                            ;BRANCH IF ERROR
                           044C         $CONNECT W^RAB                             ;CONNECT THE RECORD ACCESS BLOCK
              09 50   E8   0457         BLBS     R0,20$
                           045A 10$:    $EXIT_S  R0                                ;EXIT WITH STATUS IN R0
   00000020'EF    01  D0   0463 20$:    MOVL     #1,PASSCNT                        ;INITIALIZE THE PASS COUNT
                           046A         $RESUME_S PID                              ;SET UP PROCESS ID
50    00000018'EF     3C   0479         MOVZWL   PID,R0
                           0480         $FAO_S   PIDCTL,MSGLEN,PIDMSGD,R0          ;INIT THE PROCESS ID STRING
                           0498
                           0498 CRETVA_MESSAGE:
                           0498         $FAO_S   RUN1_MSG,MSGLEN,MSGBUFD           ;INFORM OPR NORMAL VA USED FOR TEST
              07BF    30   04AF         BSBW     TYPE_MSGBUF
       0010'CF    04  CA   04B2         BICL     #CTL$M_PIDMSG,W^CTLFLG            ;STOP PROCESS ID FROM PRINTING
                           04B7
```

```
                         04B7    432 RSTART_1:
                         04B7    433            RANGECHK ON
0010'CF     08     C8    04B7                            BISL    #CTL$M_RNGCHK,W^CTLFLG
                         04BC    434            $FAO_S   IDMSG,MSGLEN,MSGBUFD,PASSCNT
        0795     30      04D9    435            BSBW     TYPEMSGBUF
                         04DC    436            EXPREG   #1
      53    01     3C    04DC                            MOVZWL  S^#SS$_NORMAL,R3
      54    01     D0    04DF                            MOVL    #1,R4
51    0008'CF      DE    04E2                            MOVAL   W^RETRANGE,R1
            55     D4    04E7                            CLRL    R5
          06A2     30    04E9                            BSBW    EXPREGSUBR
52    0008'CF      7D    04EC    437            MOVQ     W^RETRANGE,R2
0000'CF     52     7D    04F1    438            MOVQ     R2,W^INRANGE
0014'CF     52     D0    04F6    439            MOVL     R2,W^SAVEND
```

```
                              04FB   441          .SBTTL  LOCK AND UNLOCK FROM WORKING SET TEST
                              04FB   442  ;
                              04FB   443  ; TEST LOCK/UNLOCK PAGES FROM WORKING SET
                              04FB   444  ;
 5A    0014'CF   D0           04FB   445          MOVL    W^SAVEND,R10
 5B    05FF CA   DE           0500   446          MOVAL   <3*512-1>(R10),R11
                              0505   447          CRETVA  R10,R11
 0000'CF    5A   D0           0505                        MOVL     R10,W^INRANGE
 0004'CF    5B   D0           050A                        MOVL     R11,W^INRANGE+4
      53    01   3C           050F                        MOVZWL   S^#SS$_NORMAL,R3
 50    0000'CF   DE           0512                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           0517                        MOVAL    W^RETRANGE,R1
          05C2   30           051C                        BSBW     CRETVASUBR
                              051F   448          LKWSET
      53    01   3C           051F                        MOVZWL   S^#SS$_WASCLR,R3
 50    0000'CF   DE           0522                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           0527                        MOVAL    W^RETRANGE,R1
          05DA   30           052C                        BSBW     LKWSETSUBR
                              052F   449          ULWSET
      53    09   3C           052F                        MOVZWL   S^#SS$_WASSET,R3
 50    0000'CF   DE           0532                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           0537                        MOVAL    W^RETRANGE,R1
          05DE   30           053C                        BSBW     ULWSETSUBR
                              053F   450
                              053F   451          LKWSET  ENDVA=R10                        ;LOCK FIRST PAGE ONLY
 0004'CF    5A   D0           053F                        MOVL     R10,W^INRANGE+4
      53    01   3C           0544                        MOVZWL   S^#SS$_WASCLR,R3
 50    0000'CF   DE           0547                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           054C                        MOVAL    W^RETRANGE,R1
          05B5   30           0551                        BSBW     LKWSETSUBR
                              0554   452          LKWSET  ENDVA=R11,STATUS=#SS$_WASSET     ;LOCK ALL, FIRST ALREADY LOCKED
 0004'CF    5B   D0           0554                        MOVL     R11,W^INRANGE+4
      53    09   3C           0559                        MOVZWL   #SS$_WASSET,R3
 50    0000'CF   DE           055C                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           0561                        MOVAL    W^RETRANGE,R1
          05A0   30           0566                        BSBW     LKWSETSUBR
                              0569   453          ULWSET  ENDVA=R10                        ;UNLOCK FIRST PAGE ONLY
 0004'CF    5A   D0           0569                        MOVL     R10,W^INRANGE+4
      53    09   3C           056E                        MOVZWL   S^#SS$_WASSET,R3
 50    0000'CF   DE           0571                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           0576                        MOVAL    W^RETRANGE,R1
          059F   30           057B                        BSBW     ULWSETSUBR
                              057E   454          ULWSET  ENDVA=R11,STATUS=#SS$_WASCLR     ;UNLOCK ALL, FIRST ALREADY UNLOCKED
 0004'CF    5B   D0           057E                        MOVL     R11,W^INRANGE+4
      53    01   3C           0583                        MOVZWL   #SS$_WASCLR,R3
 50    0000'CF   DE           0586                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           058B                        MOVAL    W^RETRANGE,R1
          058A   30           0590                        BSBW     ULWSETSUBR
                              0593   455
                              0593   456          LKWSET  STARTVA=R11                      ;LOCK LAST PAGE ONLY
 0000'CF    5B   D0           0593                        MOVL     R11,W^INRANGE
      53    01   3C           0598                        MOVZWL   S^#SS$_WASCLR,R3
 50    0000'CF   DE           059B                        MOVAL    W^INRANGE,R0
 51    0008'CF   DE           05A0                        MOVAL    W^RETRANGE,R1
          0561   30           05A5                        BSBW     LKWSETSUBR
                              05A8   457          LKWSET  STARTVA=R10,STATUS=#SS$_WASSET   ;LOCK ALL, LAST ALREADY LOCKED
 0000'CF    5A   D0           05A8                        MOVL     R10,W^INRANGE
```

```
            53     09   3C  05AD                          MOVZWL  #SS$_WASSET,R3
      50  0000'CF       DE  05B0                          MOVAL   W^INRANGE,R0
      51  0008'CF       DE  05B5                          MOVAL   W^RETRANGE,R1
              054C      30  05BA                          BSBW    LKWSETSUBR
                            05BD   458          ULWSET    STARTVA=R11                     ;UNLOCK LAST PAGE ONLY
    0000'CF        5B   D0  05BD                          MOVL    R11,W^INRANGE
            53     09   3C  05C2                          MOVZWL  S^#SS$_WASSET,R3
      50  0000'CF       DE  05C5                          MOVAL   W^INRANGE,R0
      51  0008'CF       DE  05CA                          MOVAL   W^RETRANGE,R1
              054B      30  05CF                          BSBW    ULWSETSUBR
                            05D2   459          ULWSET    STARTVA=R10,STATUS=#SS$_WASCLR  ;UNLOCK ALL, LAST ALREADY UNLOCKED
    0000'CF        5A   D0  05D2                          MOVL    R10,W^INRANGE
            53     01   3C  05D7                          MOVZWL  #SS$_WASCLR,R3
      50  0000'CF       DE  05DA                          MOVAL   W^INRANGE,R0
      51  0008'CF       DE  05DF                          MOVAL   W^RETRANGE,R1
              0536      30  05E4                          BSBW    ULWSETSUBR
                            05E7   460          DELTVA                                    ;CLEAN UP
            53     01   3C  05E7                          MOVZWL  S^#SS$_NORMAL,R3
      50  0000'CF       DE  05EA                          MOVAL   W^INRANGE,R0
      51  0008'CF       DE  05EF                          MOVAL   W^RETRANGE,R1
              04FE      30  05F4                          BSBW    DELTVASUBR
```

```
                                05F7   462            .SBTTL  FORCE ERRORS IN LOCK/UNLOCK FROM WORKING SET
                                05F7   463    ;
                                05F7   464    ; FORCE ERRORS IN LOCK/UNLOCK FROM WORKING SET
                                05F7   465    ;
                                05F7   466            LKWSET  #^X80000200,#^X80000A00,#SS$_NOPRIV ;LOCK SYSTEM PAGE
  0000'CF     80000200 8F   D0  05F7                   MOVL    #^X80000200,W^INRANGE
  0004'CF     80000A00 8F   D0  0600                   MOVL    #^X80000A00,W^INRANGE+4
                    53  24  3C  0609                   MOVZWL  #SS$_NOPRIV,R3
             50   0000'CF   DE  060C                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0611                   MOVAL   W^RETRANGE,R1
                      04F0  30  0616                   BSBW    LKWSETSUBR
                                0619   467            ULWSET  STATUS=#SS$_NOPRIV                   ;UNLOCK SYSTEM PAGES
                    53  24  3C  0619                   MOVZWL  #SS$_NOPRIV,R3
             50   0000'CF   DE  061C                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0621                   MOVAL   W^RETRANGE,R1
                      04F4  30  0626                   BSBW    ULWSETSUBR
                                0629   468            LKWSET  #<1@31-<128@9>-1>,W^INRANGE,#SS$_PAGOWNVIO
  0000'CF     7FFEFFFF 8F   D0  0629                   MOVL    #<1@31-<128@9>-1>,W^INRANGE
       0004'CF    0000'CF   D0  0632                   MOVL    W^INRANGE,W^INRANGE+4
             53    01EC 8F  3C  0639                   MOVZWL  #SS$_PAGOWNVIO,R3
             50   0000'CF   DE  063E                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0643                   MOVAL   W^RETRANGE,R1
                      04BE  30  0648                   BSBW    LKWSETSUBR
                                064B   469                                                         ;LOCK PAGE OWNED BY SOMEONE ELSE
                                064B   470            ULWSET  STATUS=#SS$_PAGOWNVIO                ;UNLOCK PAGE OWNED BY SOMEONE ELSE
             53    01EC 8F  3C  064B                   MOVZWL  #SS$_PAGOWNVIO,R3
             50   0000'CF   DE  0650                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0655                   MOVAL   W^RETRANGE,R1
                      04C0  30  065A                   BSBW    ULWSETSUBR
                                065D   471            LKWSET  W^SAVEND,W^SAVEND,#SS$_ACCVIO    ;LOCK NONEXISTENT PAGE
     0000'CF      0014'CF   D0  065D                   MOVL    W^SAVEND,W^INRANGE
     0004'CF      0014'CF   D0  0664                   MOVL    W^SAVEND,W^INRANGE+4
                    53  0C  3C  066B                   MOVZWL  #SS$_ACCVIO,R3
             50   0000'CF   DE  066E                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0673                   MOVAL   W^RETRANGE,R1
                      048E  30  0678                   BSBW    LKWSETSUBR
                                067B   472            ULWSET  STATUS=#SS$_ACCVIO                   ;UNLOCK NONEXISTENT PAGE
                    53  0C  3C  067B                   MOVZWL  #SS$_ACCVIO,R3
             50   0000'CF   DE  067E                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  0683                   MOVAL   W^RETRANGE,R1
                      0492  30  0688                   BSBW    ULWSETSUBR
                                068B   473            LKWSET  #0,#0,#SS$_ACCVIO                    ;LOCK DELETED PAGE
             0000'CF    00  D0  068B                   MOVL    #0,W^INRANGE
             0004'CF    00  D0  0690                   MOVL    #0,W^INRANGE+4
                    53  0C  3C  0695                   MOVZWL  #SS$_ACCVIO,R3
             50   0000'CF   DE  0698                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  069D                   MOVAL   W^RETRANGE,R1
                      0464  30  06A2                   BSBW    LKWSETSUBR
                                06A5   474            ULWSET  STATUS=#SS$_ACCVIO                   ;UNLOCK DELETED PAGE
                    53  0C  3C  06A5                   MOVZWL  #SS$_ACCVIO,R3
             50   0000'CF   DE  06A8                   MOVAL   W^INRANGE,R0
             51   0008'CF   DE  06AD                   MOVAL   W^RETRANGE,R1
                      0468  30  06B2                   BSBW    ULWSETSUBR
                                06B5   475
     0000'CF      0014'CF   D0  06B5   476            MOVL    W^SAVEND,W^INRANGE
  0014'CF     000005FF 8F   C1  06BC   477            ADDL3   #3*512-1,W^SAVEND,W^INRANGE+4
                   0004'CF      06C5
```

```
                            06C8    478          CRETVA                                      ;CREATE SOME PAGES
            53    01    3C  06C8                         MOVZWL  S^#SS$_NORMAL,R3
      50  0000'CF    DE  06CB                         MOVAL   W^INRANGE,R0
      51  0008'CF    DE  06D0                         MOVAL   W^RETRANGE,R1
              0409    30  06D5                         BSBW    CRETVASUBR
                            06D8    479          LKWSET  STATUS=#SS$_ACCVIO,INADR=W^4       ;INPUT RANGE NOT ACCESSIBLE
            53    0C    3C  06D8                         MOVZWL  #SS$_ACCVIO,R3
      50  0004'CF    DE  06DB                         MOVAL   W^4,R0
      51  0008'CF    DE  06E0                         MOVAL   W^RETRANGE,R1
              0421    30  06E5                         BSBW    LKWSETSUBR
                            06E8    480          ULWSET  STATUS=#SS$_ACCVIO,INADR=W^4       ;INPUT RANGE NOT ACCESSIBLE
            53    0C    3C  06E8                         MOVZWL  #SS$_ACCVIO,R3
      50  0004'CF    DE  06EB                         MOVAL   W^4,R0
      51  0008'CF    DE  06F0                         MOVAL   W^RETRANGE,R1
              0425    30  06F5                         BSBW    ULWSETSUBR
                            06F8    481          LKWSET  STATUS=#SS$_ACCVIO,RETADR=W^8      ;RETURN RANGE NOT ACCESSIBLE
            53    0C    3C  06F8                         MOVZWL  #SS$_ACCVIO,R3
      50  0000'CF    DE  06FB                         MOVAL   W^INRANGE,R0
      51  0008'CF    DE  0700                         MOVAL   W^8,R1
              0401    30  0705                         BSBW    LKWSETSUBR
                            0708    482          ULWSET  STATUS=#SS$_ACCVIO,RETADR=W^8      ;RETURN RANGE NOT ACCESSIBLE
            53    0C    3C  0708                         MOVZWL  #SS$_ACCVIO,R3
      50  0000'CF    DE  070B                         MOVAL   W^INRANGE,R0
      51  0008'CF    DE  0710                         MOVAL   W^8,R1
              0405    30  0715                         BSBW    ULWSETSUBR
                            0718    483          CRETVA  W^SAVEND,#1@30-1,#SS$_VASFULL     ;CREATE ALL POSSIBLE PAGES
   0000'CF    0014'CF    D0  0718                         MOVL    W^SAVEND,W^INRANGE
0004'CF   3FFFFFFF 8F    D0  071F                         MOVL    #1@30-1,W^INRANGE+4
      53     0244 8F    3C  0728                         MOVZWL  #SS$_VASFULL,R3
      50    0000'CF    DE  072D                         MOVAL   W^INRANGE,R0
      51    0008'CF    DE  0732                         MOVAL   W^RETRANGE,R1
              03A7    30  0737                         BSBW    CRETVASUBR
                            073A    484          LKWSET  STATUS=#SS$_LKWSETFUL               ;AND TRY TO LOCK TOO MANY
      53     0194 8F    3C  073A                         MOVZWL  #SS$_LKWSETFUL,R3
      50    0000'CF    DE  073F                         MOVAL   W^INRANGE,R0
      51    0008'CF    DE  0744                         MOVAL   W^RETRANGE,R1
              03BD    30  0749                         BSBW    LKWSETSUBR
                            074C    485          RANGECHK OFF
       0010'CF    08    CA  074C                         BICL    #CTL$M_RNGCHK,W^CTLFLG
                            0751    486          ULWSET  INADR=W^RETRANGE                    ;UNLOCK ALL THAT WERE LOCKED
            53    09    3C  0751                         MOVZWL  S^#SS$_WASSET,R3
      50  0008'CF    DE  0754                         MOVAL   W^RETRANGE,R0
      51  0008'CF    DE  0759                         MOVAL   W^RETRANGE,R1
              038C    30  075E                         BSBW    ULWSETSUBR
                            0761    487          DELTVA  #1@30-1,W^SAVEND                    ;DELETE ALL THAT WERE CREATED
0000'CF   3FFFFFFF 8F    D0  0761                         MOVL    #1@30-1,W^INRANGE
   0004'CF    0014'CF    D0  076A                         MOVL    W^SAVEND,W^INRANGE+4
            53    01    3C  0771                         MOVZWL  S^#SS$_NORMAL,R3
      50  0000'CF    DE  0774                         MOVAL   W^INRANGE,R0
      51  0008'CF    DE  0779                         MOVAL   W^RETRANGE,R1
              0374    30  077E                         BSBW    DELTVASUBR
                            0781    488          RANGECHK ON
       0010'CF    08    C8  0781                         BISL    #CTL$M_RNGCHK,W^CTLFLG
                            0786    489 ;
                            0786    490 ;   END OF LOOP
                            0786    491 ;
03 0020'CF    001C'CF    F3  0786    492                 AOBLEQ  W^MAXPASSCNT,W^PASSCNT,150$
```

```
0003   31  078E   493          BRW     GBL_SEC_MESSAGE
FD23   31  0791   494 150$:    BRW     RSTART_T
           0794   495
```

```
MM
VA

As

Th
89
Th
79
50



Ma
--
_$
-$
TO

11

Th

MA
```

```
                              0794   497            .SBTTL  TEST/FORCE ERRORS IN LOCK/UNLOCK GLOBAL SECTS
                              0794   498 ;
                              0794   499 ;TEST & FORCE ERRORS IN LOCKING/UNLOCKING GLOBAL SECTIONS
                              0794   500 ;
                              0794   501 GBL_SEC_MESSAGE:
      0010'CF    04      C8   0794   502            BISL    #CTL$M_PIDMSG,W^CTLFLG            ;ALLOW PROCESS ID TO PRINT
                              0799   503            $FAO_S  RUN2_MSG,MSGLEN,MSGBUFD           ;INFORM OPR GBL SECTION VA SPACE BEI
               04BE      30   07B0   504            BSBW    TYPEMSGBUF                        ;USED FOR TESTS
      0010'CF    04      CA   07B3   505            BICL    #CTL$M_PIDMSG,W^CTLFLG            ;STOP PROCESS ID FROM PRINTING
      0020'CF    01      D0   07B8   506            MOVL    #1,W^PASSCNT                      ;REINITIALIZE THE PASS COUNT
                              07BD   507
                              07BD   508 RSTART_2:
                              07BD   509            RANGECHK ON
      0010'CF    08      C8   07BD                          BISL    #CTL$M_RNGCHK,W^CTLFLG
                              07C2   510            $FAO_S  IDMSG,MSGLEN,MSGBUFD,PASSCNT
               048F      30   07DF   511            BSBW    TYPEMSGBUF
                              07E2   512            EXPREG  #1
            53   01      3C   07E2                          MOVZWL  S^#SS$_NORMAL,R3
            54   01      D0   07E5                          MOVL    #1,R4
      51   0008'CF       DE   07E8                          MOVAL   W^RETRANGE,R1
                 55      D4   07ED                          CLRL    R5
               039C      30   07EF                          BSBW    EXPREGSUBR
      52   0008'CF       7D   07F2   513            MOVQ    W^RETRANGE,R2
      0000'CF    52      7D   07F7   514            MOVQ    R2,W^INRANGE
      0014'CF    52      D0   07FC   515            MOVL    R2,W^SAVEND
                              0801   516
    0000'CF   0014'CF    D0   0801   517            MOVL    W^SAVEND,W^INRANGE                ;DEFINE INRANGE AT END OF CODE
    0004'CF   0014'CF    D0   0808   518            MOVL    W^SAVEND,W^INRANGE+4
                              080F   519            CREMAPSEC       -                         ;CREATE READ-ONLY GLOBAL SECTION
                              080F   520                    INADR=<W^INRANGE>,-
                              080F   521                    FLAGS=#<SEC$M_GBL!SEC$M_PERM>,-
                              080F   522                    PAGCNT=#10,-
                              080F   523                    RETADR=<W^RETRANGE>
            53   01      3C   080F                          MOVZWL  S^#SS$_NORMAL,R3
                              0812          30000$:
                 00      DD   0812                          PUSHL   #0
                 0A      DD   0814                          PUSHL   #10
            FC1A CF      DF   0816                          PUSHAL  W^FILENAME
                 00      DD   081A                          PUSHL   #0
            FC0C CF      DF   081C                          PUSHAL  W^GBLSECNAM
        00004001 8F      DD   0820                          PUSHL   #<SEC$M_GBL!SEC$M_PERM>
            0008'CF      DF   0826                          PUSHAL  W^RETRANGE
            0000'CF      DF   082A                          PUSHAL  W^INRANGE
   00000000'EF   08      FB   082E                          CALLS   #8,LIB$_CREMAPSEC
   50   0001828A 8F      D1   0835                          CMPL    #^X1828A,R0                ;IF PREVIOUS GBL SECTION HASN'T
                 D4      13   083C                          BEQL    30000$                     ;BEEN DELETED TRY CREMAPSEC AGAIN.
      51    FB9A CF      DE   083E                          MOVAL   W^CRMPSCERR,R1
               02E9      30   0843                          BSBW    CHECK1
                              0846   524            LKWSET  W^RETRANGE,W^RETRANGE+4           ;LOCK READ-ONLY GLOBAL SECTION
    0000'CF   0008'CF    D0   0846                          MOVL    W^RETRANGE,W^INRANGE
    0004'CF   000C'CF    D0   084D                          MOVL    W^RETRANGE+4,W^INRANGE+4
            53   01      3C   0854                          MOVZWL  S^#SS$_WASCLR,R3
      50   0000'CF       DE   0857                          MOVAL   W^INRANGE,R0
      51   0008'CF       DE   085C                          MOVAL   W^RETRANGE,R1
               02A5      30   0861                          BSBW    LKWSETSUBR
                              0864   525            ULWSET  W^RETRANGE,W^RETRANGE+4           ;UNLOCK WHAT WE LOCKED
    0000'CF   0008'CF    D0   0864                          MOVL    W^RETRANGE,W^INRANGE
    0004'CF    000C'CF   D0  086B                       MOVL    W^RETRANGE+4,W^INRANGE+4
                  53 09  3C  0872                       MOVZWL  S^#SS$_WASSET,R3
         50    0000'CF   DE  0875                       MOVAL   W^INRANGE,R0
         51    0008'CF   DE  087A                       MOVAL   W^RETRANGE,R1
                  029B   30  087F                       BSBW    ULWSETSUBR
                             0882   526         DELTVA                                  ;DELETE WHAT WE CREATED
                  53 01  3C  0882                       MOVZWL  S^#SS$_NORMAL,R3
         50    0000'CF   DE  0885                       MOVAL   W^INRANGE,R0
         51    0008'CF   DE  088A                       MOVAL   W^RETRANGE,R1
                  0263   30  088F                       BSBW    DELTVASUBR
                             0892   527         $DGBLSC_S       -                       ;DELETE THE SECTION
                             0892   528                 GSDNAM=<W^GBLSECNAM>
    0000'CF    0014'CF   D0  08A1   529         MOVL    W^SAVEND,W^INRANGE
    0004'CF    0014'CF   D0  08A8   530         MOVL    W^SAVEND,W^INRANGE+4
                             08AF   531         CREMAPSEC       -                       ;CREATE A WRITABLE GLOBAL SECTION
                             08AF   532                 INADR=<W^INRANGE>,-
                             08AF   533                 FLAGS=#<SEC$M_GBL!SEC$M_WRT!SEC$M_PERM>,-
                             08AF   534                 PAGCNT=#10,-
                             08AF   535                 RETADR=<W^RETRANGE>
              53      01     3C  08AF                   MOVZWL  S^#SS$_NORMAL,R3
                             08B2           30001$:
                    00   DD  08B2                       PUSHL   #0
                    0A   DD  08B4                       PUSHL   #10
               FB7A CF   DF  08B6                       PUSHAL  W^FILENAME
                    00   DD  08BA                       PUSHL   #0
               FB6C CF   DF  08BC                       PUSHAL  W^GBLSECNAM
           00004009 8F   DD  08C0                       PUSHL   #<SEC$M_GBL!SEC$M_WRT!SEC$M_PERM>
               0008'CF   DF  08C6                       PUSHAL  W^RETRANGE
               0000'CF   DF  C8CA                       PUSHAL  W^INRANGE
  00000000'EF      08    FB  08CE                       CALLS   #8,LIB$_CREMAPSEC
   50      0001828A 8F   D1  08D5                       CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                    D4   13  08DC                       BEQL    30001$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51    FAFA CF   DE  08DE                       MOVAL   W^CRMPSCERR,R1
                  0249   30  08E3                       BSBW    CHECK1
                             08E6   536         LKWSET  W^RETRANGE,W^RETRANGE+4,STATUS=#SS$_NOPRIV      ;TRY TO LOCK IT
    0000'CF    0008'CF   D0  08E6                       MOVL    W^RETRANGE,W^INRANGE
    0004'CF    000C'CF   D0  08ED                       MOVL    W^RETRANGE+4,W^INRANGE+4
                  53 24  3C  08F4                       MOVZWL  #SS$_NOPRIV,R3
         50    0000'CF   DE  08F7                       MOVAL   W^INRANGE,R0
         51    0008'CF   DE  08FC                       MOVAL   W^RETRANGE,R1
                  0205   30  0901                       BSBW    LKWSETSUBR
                             0904   537         DELTVA                                  ;DELETE WHAT WE CREATED
                  53 01  3C  0904                       MOVZWL  S^#SS$_NORMAL,R3
         50    0000'CF   DE  0907                       MOVAL   W^INRANGE,R0
         51    0008'CF   DE  090C                       MOVAL   W^RETRANGE,R1
                  01E1   30  0911                       BSBW    DELTVASUBR
                             0914   538         $DGBLSC_S       -                       ;DELETE THE SECTION
                             0914   539                 GSDNAM=<W^GBLSECNAM>
                             0923   540 ;
                             0923   541 ; END OF LOOP
                             0923   542 ;
 03 0020'CF    001C'CF   F3  0923   543         AOBLEQ  W^MAXPASSCNT,W^PASSCNT,160$
                  0003   31  092B   544         BRW     PFNMAP_MESSAGE
                  FE8C   31  092E   545 160$:   BRW     RSTART_2
```

```
                              0931   547          .SBTTL  TEST/FORCE ERRORS IN LOCK/UNLOCK GLOBAL SECTS
                              0931   548 ;
                              0931   549 ;TEST & FORCE ERRORS IN LOCKING/UNLOCKING PFN MAPPED SECTIONS
                              0931   550 ;
                              0931   551 PFNMAP_MESSAGE:
     0010'CF     04      C8   0931   552          BISL     #CTL$M_PIDMSG,W^CTLFLG          ;ALLOW PROCESS ID TO PRINT
                              0936   553          $FAO_S   RUN3_MSG,MSGLEN,MSGBUFD         ;INFORM OPR PFN MAPPING BEING
           0321          30   094D   554          BSBW     TYPEMSGBUF                      ;USED FOR TESTS
     0010'CF     04      CA   0950   555          BICL     #CTL$M_PIDMSG,W^CTLFLG          ;STOP PROCESS ID FROM PRINTING
     0020'CF     01      D0   0955   556          MOVL     #1,W^PASSCNT                    ;REINITIALIZE THE PASS COUNT
                              095A   557
                              095A   558 RSTART_3:
                              095A   559          RANGECHK ON
     0010'CF     08      C8   095A                         BISL     #CTL$M_RNGCHK,W^CTLFLG
                              095F   560          $FAO_S   IDMSG,MSGLEN,MSGBUFD,PASSCNT
           02F2          30   097C   561          BSBW     TYPEMSGBUF
                              097F   562          EXPREG   #1
           53    01      3C   097F                         MOVZWL   S^#SS$_NORMAL,R3
           54    01      D0   0982                         MOVL     #1,R4
     51    0008'CF       DE   0985                         MOVAL    W^RETRANGE,R1
                 55      D4   098A                         CLRL     R5
               01FF      30   098C                         BSBW     EXPREGSUBR
     52    0008'CF       7D   098F   563          MOVQ     W^RETRANGE,R2
     0000'CF     52      7D   0994   564          MOVQ     R2,W^INRANGE
     0014'CF     52      D0   0999   565          MOVL     R2,W^SAVEND
                              099E   566
 0000'CF     0014'CF     D0   099E   567          MOVL     W^SAVEND,W^INRANGE              ;DEFINE INRANGE AT END OF CODE
 0004'CF     0014'CF     D0   09A5   568          MOVL     W^SAVEND,W^INRANGE+4
           53    01      3C   09AC   569          MOVZWL   S^#SS$_NORMAL,R3                ;SET EXPECTED RETURN STATUS
                              09AF   570 L1:
                              09AF   571          $CRMPSC_S          -                    ;CREATE PFN MAPPED SECTION
                              09AF   572                   INADR=<W^INRANGE>,-
                              09AF   573                   RETADR=<W^RETRANGE>,-
                              09AF   574                   GSDNAM=<W^GBLSECNAM>,-
                              09AF   575                   VBN=#0,-
                              09AF   576                   FLAGS=#<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP>,-
                              09AF   577                   PAGCNT=#25
                              09D7   578 ;*****
                              09D7   579 ;IN ORDER TO REMOVE THE TEMPORARY FIX EXPLAINED ABOVE REMOVE THE LINES
                              09D7   580 ;STARTING FROM HERE AND EXTENDING THE THE NEXT SET OF ASTERICS.
                              09D7   581 ;
  50    0001828A 8F      D1   09D7   582                   CMPL     #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                 CF      13   09DE   583                   BEQL     L1                      ;BEEN DELETED TRY CREMAPSEC AGAIN.
                              09E0   584 ;*****
     51    F9F8 CF       DE   09E0   585                   MOVAL    W^CRMPSCERR,R1
               0147      30   09E5   586                   BSBW     CHECK1
                              09E8   587
                              09E8   588          LKWSET   W^RETRANGE,W^RETRANGE+4         ;LOCK READ-ONLY PFN MAPPED SECTION
 0000'CF     0008'CF     D0   09E8                         MOVL     W^RETRANGE,W^INRANGE
 0004'CF     000C'CF     D0   09EF                         MOVL     W^RETRANGE+4,W^INRANGE+4
           53    01      3C   09F6                         MOVZWL   S^#SS$_WASCLR,R3
     50    0000'CF       DE   09F9                         MOVAL    W^INRANGE,R0
     51    0008'CF       DE   09FE                         MOVAL    W^RETRANGE,R1
               0103      30   0A03                         BSBW     LKWSETSUBR
                              0A06   589          ULWSET   W^RETRANGE,W^RETRANGE+4         ;UNLOCK WHAT WE LOCKED
 0000'CF     0008'CF     D0   0A06                         MOVL     W^RETRANGE,W^INRANGE
 0004'CF     000C'CF     D0   0A0D                         MOVL     W^RETRANGE+4,W^INRANGE+4
```

```
              53    09   3C  0A14                    MOVZWL  S^#SS$_WASSET,R3
         50   0000'CF    DE  0A17                    MOVAL   W^INRANGE,R0
         51   0008'CF    DE  0A1C                    MOVAL   W^RETRANGE,R1
                 00F9    30  0A21                    BSBW    ULWSETSUBR
                             0A24   590        DELTVA                                       ;DELETE WHAT WE CREATED
              53    01   3C  0A24                    MOVZWL  S^#SS$_NORMAL,R3
         50   0000'CF    DE  0A27                    MOVAL   W^INRANGE,R0
         51   0008'CF    DE  0A2C                    MOVAL   W^RETRANGE,R1
                 00C1    30  0A31                    BSBW    DELTVASUBR
                             0A34   591        $DGBLSC_S        -                           ;DELETE THE SECTION
                             0A34   592                  GSDNAM=<W^GBLSECNAM>
   0000'CF    0014'CF    D0  0A43   593        MOVL      W^SAVEND,W^INRANGE
   0004'CF    0014'CF    D0  0A4A   594        MOVL      W^SAVEND,W^INRANGE+4
              53    01   3C  0A51   595        MOVZWL    S^#SS$_NORMAL,R3                   ;SET EXPECTED RETURN STATUS
                             0A54   596 L2:
                             0A54   597        $CRMPSC_S        -                           ;CREATE PFN MAPPED WRITABLE SECTION
                             0A54   598                  INADR=<W^INRANGE>,-
                             0A54   599                  RETADR=<W^RETRANGE>,-
                             0A54   600                  GSDNAM=<W^GBLSECNAM>,-
                             0A54   601                  VBN=#0,-
                             0A54   602                  FLAGS=#<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>,-
                             0A54   603                  PAGCNT=#25
                             0A7C   604 ;*****
                             0A7C   605 ;IN ORDER TO REMOVE THE TEMPORARY FIX EXPLAINED ABOVE REMOVE THE LINES
                             0A7C   606 ;STARTING FROM HERE AND EXTENDING THE THE NEXT SET OF ASTERICS.
                             0A7C   607 ;
      50   0001828A 8F   D1  0A7C   608                  CMPL    #^X1828A,R0                ;IF PREVIOUS GBL SECTION HASN'T
                   CF    13  0A83   609                  BEQL    L2                         ;BEEN DELETED TRY CREMAPSEC AGAIN.
                             0A85   610 ;*****
         51   F953 CF    DE  0A85   611                  MOVAL   W^CRMPSCERR,R1
                 00A2    30  0A8A   612                  BSBW    CHECK1
                             0A8D   613
                             0A8D   614        LKWSET    W^RETRANGE,W^RETRANGE+4,STATUS=#SS$_NOPRIV       ;TRY TO LOCK IT
   0000'CF    0008'CF    D0  0A8D                    MOVL    W^RETRANGE,W^INRANGE
   0004'CF    000C'CF    D0  0A94                    MOVL    W^RETRANGE+4,W^INRANGE+4
              53    24   3C  0A9B                    MOVZWL  #SS$_NOPRIV,R3
         50   0000'CF    DE  0A9E                    MOVAL   W^INRANGE,R0
         51   0008'CF    DE  0AA3                    MOVAL   W^RETRANGE,R1
                 005E    30  0AA8                    BSBW    LKWSETSUBR
                             0AAB   615        DELTVA                                       ;DELETE WHAT WE CREATED
              53    01   3C  0AAB                    MOVZWL  S^#SS$_NORMAL,R3
         50   0000'CF    DE  0AAE                    MOVAL   W^INRANGE,R0
         51   0008'CF    DE  0AB3                    MOVAL   W^RETRANGE,R1
                 003A    30  0AB8                    BSBW    DELTVASUBR
                             0ABB   616        $DGBLSC_S        -                           ;DELETE THE SECTION
                             0ABB   617                  GSDNAM=<W^GBLSECNAM>
                             0ACA   618 ;
                             0ACA   619 ; END OF LOOP
                             0ACA   620 ;
 0C 0020'CF   001C'CF    F3  0ACA   621        AOBLEQ    W^MAXPASSCNT,W^PASSCNT,170$
              50    01   D0  0AD2   622        MOVL      #1,R0
                             0AD5   623        $EXIT_S R0
                 FE79    31  0ADE   624 170$:  BRW       RSTART_3
                             0AE1   625
```

```
                          0AE1          .SBTTL  SUBROUTINES TO CALL THE SERVICES
                          0AE1    ;
                          0AE1    ; INPUT:
                          0AE1    ;
                          0AE1    ;         R0 = INADR
                          0AE1    ;         R1 = RETADR
                          0AE1    ;         R3 = DESIRED STATUS
                          0AE1    ;
                          0AE1    ; OUTPUT:
                          0AE1    ;
                          0AE1    ;         R2 PRESERVED
                          0AE1    ;
                          0AE1    CRETVASUBR:
                          0AE1            $CRETVA_S (R0),(R1)
51      F8DA CF      DE   0AEE            MOVAL   W^CRETVAERR,R1                  ;ERROR CONTROL STRING
               3A    11   0AF3            BRB     CHECK1
                          0AF5    ;
                          0AF5    ; INPUT:
                          0AF5    ;
                          0AF5    ;         R0 = INADR
                          0AF5    ;         R1 = RETADR
                          0AF5    ;         R3 = DESIRED STATUS
                          0AF5    ;
                          0AF5    ; OUTPUT:
                          0AF5    ;
                          0AF5    ;         R2 PRESERVED
                          0AF5    ;
                          0AF5    DELTVASUBR:
                          0AF5            $DELTVA_S (R0),(R1)
51      F8CE CF      DE   0B02            MOVAL   W^DELTVAERR,R1                  ;ERROR CONTROL STRING
               26    11   0B07            BRB     CHECK1
                          0B09    ;
                          0B09    ; INPUT:
                          0B09    ;
                          0B09    ;         R0 = INADR
                          0B09    ;         R1 = RETADR
                          0B09    ;         R3 = DESIRED STATUS
                          0B09    ;
                          0B09    ; OUTPUT:
                          0B09    ;
                          0B09    ;         R2 PRESERVED
                          0B09    ;
                          0B09    LKWSETSUBR:
                          0B09            $LKWSET_S (R0),(R1)
51      F8D2 CF      DE   0B16            MOVAL   W^LKWSETERR,R1                  ;ERROR CONTROL STRING
               12    11   0B1B            BRB     CHECK1
                          0B1D    ;
                          0B1D    ; INPUT:
                          0B1D    ;
                          0B1D    ;         R0 = INADR
                          0B1D    ;         R1 = RETADR
                          0B1D    ;         R3 = DESIRED STATUS
                          0B1D    ;
                          0B1D    ; OUTPUT:
                          0B1D    ;
                          0B1D    ;         R2 PRESERVED
                          0B1D    ;
```

```
                            0B1D    684 ULWSETSUBR:
                            0B1D    685          $ULWSET_S (R0),(R1)
       51    F8C6 CF    DE  0B2A    686          MOVAL   W^ULWSETERR,R1                       ;ERROR CONTROL STRING
```

```
                             0B2F    688 CHECK1:
         53     50     D1    0B2F    689            CMPL    R0,R3                                  ;STATUS AS DESIRED
                57     13    0B32    690            BEQL    10$                                    ;BRANCH IF YES
     53   0244  8F     B1    0B34    691            CMPW    #SS$_VASFULL,R3                        ;IF EXPECTING VIRTUAL ADDRESS SPACE
                05     12    0B39    692            BNEQ    15$
         50     1C     B1    0B3B    693            CMPW    #SS$_EXQUOTA,R0                        ;THEN EXCEEDS QUOTA MAY ALSO BE RETU
                4B     13    0B3E    694            BEQL    10$
                             0B40    695 15$:
         53     01     B1    0B40    696            CMPW    #SS$_NORMAL,R3                         ;IF EXPECTING NORMAL
                07     12    0B43    697            BNEQ    5$                                     ;COMPLETION FOR CRMPSC
     50   0619  8F     B1    0B45    698            CMPW    #SS$_CREATED,R0                        ;THEN GLOBAL SECTION CREATED
                3F     13    0B4A    699            BEQL    10$                                    ;MAY BE RETURNED
                54     DD    0B4C    700 5$:        PUSHL   R4
       54     04 AE    D0    0B4E    701            MOVL    4(SP),R4                               ;ADDRESS OF ERROR
                             0B52    702            $FAO_S  (R1),MSGLEN,MSGBUFD,R4,R0,R3,-
                             0B52    703                    INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
                10     BA    0B85    704            POPR    #^M<R4>
              00E7     30    0B87    705            BSBW    TYPEMSGBUF
                       05    0B8A    706            RSB
                             0B8B    707 10$:
              0069     31    0B8B    708            BRW     RANGECHK                               ;GO CHECK THE RETURN RANGE
```

```
                                0B8E   710 ;
                                0B8E   711 ;  INPUT:
                                0B8E   712 ;
                                0B8E   713 ;       R1 = RETADR
                                0B8E   714 ;       R3 = DESIRED STATUS
                                0B8E   715 ;       R4 = PAGCNT
                                0B8E   716 ;       R5 = REGION
                                0B8E   717 ;
                                0B8E   718 ;  OUTPUT:
                                0B8E   719 ;
                                0B8E   720 ;       R2 PRESERVED
                                0B8E   721 ;
                                0B8E   722 EXPREGSUBR:
                                0B8E   723         $EXPREG_S R4,(R1),,R5
            51    F843 CF   DE  0B9D   724         MOVAL   W^EXPREGERR,R1                 ;ERROR CONTROL STRING
                                0BA2   725
                                0BA2   726 CHECK2:
                  53    50  D1  0BA2   727         CMPL    R0,R3                          ;STATUS AS DESIRED?
                        39  13  0BA5   728         BEQL    10$                            ;BRANCH IF YES
                        56  DD  0BA7   729         PUSHL   R6
                 56   04 AE  D0  0BA9   730         MOVL    4(SP),R6                       ;ADDRESS OF ERROR
                                0BAD   731         $FAO_S  (R1),MSGLEN,MSGBUFD,R6,R0,R3,R4,R5,-
                                0BAD   732                 RETRANGE,RETRANGE+4
                 0040 8F    BA  0BD8   733         POPR    #^M<R6>
                      0092  30  0BDC   734         BSBW    TYPEMSGBUF
                            05  0BDF   735         RSB
       0000'CF   0008'CF    D0  0BE0   736 10$:    MOVL    W^RETRANGE,W^INRANGE           ;MAKE INPUT RANGE LOOK LIKE CRETVA/D
                        54  D7  0BE7   737         DECL    R4
           54       54  09  78  0BE9   738         ASHL    #9,R4,R4
   0004'CF   0000'CF    54  C1  0BED   739         ADDL3   R4,W^INRANGE,W^INRANGE+4
                        00  11  0BF5   740         BRB     RANGECHK                       ;AND CHECK THE RETURN RANGE
                                0BF7   741
```

```
                               0BF7   743 RANGECHK:
 73 0010'CF      03     E1     0BF7   744            BBC     #CTL$V_RNGCHK,W^CTLFLG,40$       ;BRANCH IF RANGE CHECK IS DISABLED
          70     50     E9     0BFD   745            BLBC    R0,40$                           ;IF ERROR IN SERVICE, SKIP THE RANGE
 50     0000'CF         7D     0C00   746            MOVQ    W^INRANGE,R0                     ;R0 = STARVA, R1 = ENDVA
          51     50     D1     0C05   747            CMPL    R0,R1                            ;WHICH DIRECTION?
                 12     1A     0C08   748            BGTRU   10$                              ;BRANCH IF BACKWARDS
                 04     1F     0C0A   749            BLSSU   5$                               ;BRANCH IF FORWARDS
     0C 50       1E     E0     0C0C   750            BBS     #30,R0,10$                       ;FOR EQUAL, P0 SPACE FORWARDS, P1 BA
                               0C10   751 ;
                               0C10   752 ; REQUESTED RANGE IS FORWARDS
                               0C10   753 ;
 50     01FF 8F         AA     0C10   754 5$:        BICW    #^X1FF,R0                        ;FROM BYTE 0 OF STARTVA
 51     01FF 8F         A8     0C15   755            BISW    #^X1FF,R1                        ;THROUGH LAST BYTE OF ENDVA
                 0A     11     0C1A   756            BRB     20$                              ;
                               0C1C   757 ;
                               0C1C   758 ; GOING BACKWARDS IN VIRTUAL ADDRESS SPACE
                               0C1C   759 ;
 50     01FF 8F         A8     0C1C   760 10$:       BISW    #^X1FF,R0                        ;LAST BYTE OF STARTVA
 51     01FF 8F         AA     0C21   761            BICW    #^X1FF,R1                        ;THROUGH FIRST BYTE OF ENDVA
 0008'CF         50     D1     0C26   762 20$:       CMPL    R0,W^RETRANGE                    ;IS THIS WHAT WAS RETURNED?
                 07     12     0C2B   763            BNEQ    30$                              ;BRANCH IF NOT, ERROR
 000C'CF         51     D1     0C2D   764            CMPL    R1,W^RETRANGE+4                  ;THIS ONE OK TOO?
                 3C     13     0C32   765            BEQL    40$                              ;BRANCH IF YES, RANGE OK
                 53     DD     0C34   766 30$:       PUSHL   R3                               ;SAVE REGISTER
     53     04 AE       D0     0C36   767            MOVL    4(SP),R3                         ;TO USE FOR ERROR PC
                               0C3A   768            $FAO_S  <W^RANGERR>,MSGLEN,MSGBUFD,R3,-  ;FORMAT THE ERROR MESSAGE
                               0C3A   769            INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
                 08     BA     0C6B   770            POPR    #^M<R3>                          ;RESTORE SAVE REGISTER
               0001     30     0C6D   771            BSBW    TYPEMSGBUF                       ;OUTPUT THE ERROR MESSAGE
                 05            0C70   772 40$:       RSB                                      ;AND RETURN
```

```
                               0C71   774           .SBTTL  MISCELLANEOUS SUBROUTINES
                               0C71   775   ;
                               0C71   776   ; TYPE A MESSAGE
                               0C71   777   ;       MSGBUF IS THE ADDRESS OF THE BEGINNING OF THE STRING
                               0C71   778   ;       MSGLEN CONTAINS THE SIZE (IN BYTES) OF THE STRING
                               0C71   779   ;
                               0C71   780   TYPEMSGBUF:
         50   00B8'CF    D0    0C71   781           MOVL    W^MSGLEN,R0                     ;SIZE TO R0
         51   00DA'CF    DE    0C76   782           MOVAL   W^MSGBUF,R1                     ;ADDRESS TO R1
      08 0010'CF    02   E1    0C7B   783           BBC     #CTL$V_PIDMSG,W^CTLFLG,5$       ;BRANCH IF NO PROCESS ID REQUIRED
         51   00CC'CF    DE    0C81   784           MOVAL   W^MSGBUFID,R1                   ;ADDRESS INCLUDING PID MSG
              50     0E' C0    0C86   785           ADDL    S^#<MSGBUF-MSGBUFID>,R0         ;INCLUDE EXTRA BYTES IN COUNT
                               0C89   786   5$:
         009C'CF     51  D0    0C89   787           MOVL    R1,W^RAB+RAB$L_RBF              ;SET BUFFER ADDRESS
         0096'CF     50  B0    0C8E   788           MOVW    R0,W^RAB+RAB$W_RSZ              ;AND SIZE
                               0C93   789           $PUT    W^RAB                           ;OUTPUT THE MESSAGE
               01 50     E9    0C9E   790           BLBC    R0,20$
                         05    0CA1   791           RSB
                               0CA2   792   20$:    $EXIT_S R0                              ;EXIT WITH ERROR STATUS
                               0CAB   793
                               0CAB   794           .END    START
```

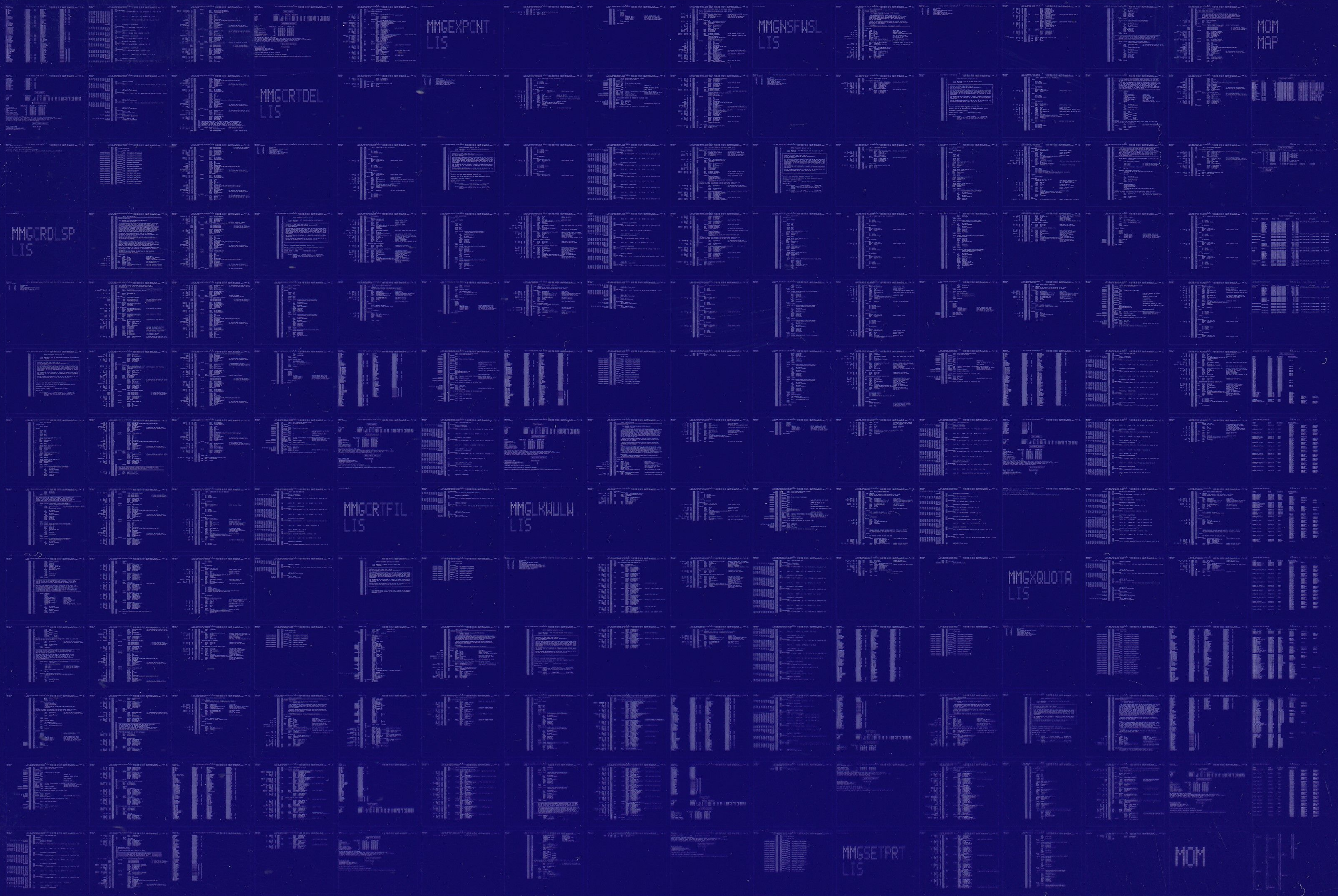
```
$$.TAB            = 00000074 R    02    IDMSGSIZ        = 00000039
$$.TABEND         = 000000B8 R    02    INRANGE           00000000 R    02
$$.TMP            = 00000000            L1                000009AF R    03
$$.TMP1           = 00000001            L2                00000A54 R    03
$$.TMP2           = 000000CF            LIB$_CREMAPSEC    ********    X 03
$$T1              = 00000000            LKWSETERR         000003EC R    03
$$T2              = 00000008            LKWSETERRADR      00000133 R    03
BIT...            = 00000004            LKWSETERRSIZ    = 00000063
CHECK1              00000B2F R    03    LKWSETSUBR        00000B09 R    03
CHECK2              00000BA2 R    03    MAXPASSCNT        0000001C R    02
CRETVAERR           000003CC R    03    MSGBUF            000000DA R    02
CRETVAERRADR        0000000A R    03    MSGBUFD           000000BC R    02
CRETVAERRSIZ      = 00000063            MSGBUFID          000000CC R    02
CRETVASUBR          00000AE1 R    03    MSGBUFSIZ       = 000000A0
CRETVA_MESSAGE      00000498 R    03    MSGLEN            000000B8 R    02
CRLF                000000CC R    02    OUTNAMADR         00000000 R    03
CRMPSCERR           000003DC R    03    OUTNAMSIZ       = 0000000A
CRMPSCERRADR        000000D0 R    03    PASSCNT           00000020 R    02
CRMPSCERRSIZ      = 00000063            PFNMAP_MESSAGE    00000931 R    03
CTL$M_MEMLOOP     = 00000001            PID               00000018 R    02
CTL$M_PIDMSG      = 00000004            PIDCTL            00000424 R    03
CTL$M_RNGCHK      = 00000008            PIDCTLADR         000003B8 R    03
CTL$M_TSTLOOP     = 00000002            PIDCTLSIZ       = 00000003
CTL$V_MEMLOOP     = 00000000            PIDMSG            000000D6 R    02
CTL$V_PIDMSG      = 00000002            PIDMSGD           000000C4 R    02
CTL$V_RNGCHK      = 00000003            PREVPROT          00000024 R    02
CTL$V_TSTLOOP     = 00000001            PRT$C_NONE      = 00000010
CTLFLG              00000010 R    02    RAB               00000074 R    02
DELTVAERR           000003D4 R    03    RAB$B_RAC       = 0000001E
DELTVAERRADR        0000006D R    03    RAB$C_BID       = 00000001
DELTVAERRSIZ      = 00000063            RAB$C_BLN       = 00000044
DELTVASUBR          00000AF5 R    03    RAB$C_SEQ       = 00000000
EXPREGERR           000003E4 R    03    RAB$L_CTX       = 00000018
EXPREGERRADR        000001F9 R    03    RAB$L_RBF       = 00000028
EXPREGERRSIZ      = 00000072            RAB$L_ROP       = 00000004
EXPREGSUBR          00000B8E R    03    RAB$W_RSZ       = 00000022
FAB                 00000024 R    02    RANGECHK          00000BF7 R    03
FAB$C_BID         = 00000003            RANGERR           000003FC R    03
FAB$C_BLN         = 00000050            RANGERRADR        0000026B R    03
FAB$C_SEQ         = 00000000            RANGERRSIZ      = 0000004F
FAB$C_VAR         = 00000002            RETRANGE          00000008 R    02
FAB$L_ALQ         = 00000010            RSTART_1          000004B7 R    03
FAB$L_FOP         = 00000004            RSTART_2          000007BD R    03
FAB$V_CHAN_MODE   = 00000002            RSTART_3          0000095A R    03
FAB$V_FILE_MODE   = 00000004            RUN1_MSG          0000040C R    03
FAB$V_LNM_MODE    = 00000000            RUN1_MSGADR       000002F3 R    03
FAB$V_PUT         = 00000000            RUN1_MSGSIZ     = 00000043
FAB$W_GBC         = 00000048            RUN2_MSG          00000414 R    03
FILENAME            00000434 R    03    RUN2_MSGADR       00000336 R    03
FILENAMEADR         000003C1 R    03    RUN2_MSGSIZ     = 00000044
FILENAMESIZ       = 0000000A            RUN3_MSG          0000041C R    03
GBLSECNAM           0000042C R    03    RUN3_MSGADR       0000037A R    03
GBLSECNAMADR        000003BB R    03    RUN3_MSGSIZ     = 0000003E
GBLSECNAMSIZ      = 00000006            SAVEND            00000014 R    02
GBL_SEC_MESSAGE     00000794 R    03    SEC$M_GBL       = 00000001
IDMSG               00000404 R    03    SEC$M_PERM      = 00004000
IDMSGADR            000002BA R    03    SEC$M_PFNMAP    = 00010000
```

```
SEC$M_WRT                      = 00000008
SIZ...                         = 00000001
SS$_ACCVIO                     = 0000000C
SS$_CREATED                    = 00000619
SS$_EXQUOTA                    = 0000001C
SS$_LKWSETFUL                  = 00000194
SS$_NOPRIV                     = 00000024
SS$_NORMAL                     = 00000001
SS$_PAGOWNVIO                  = 000001EC
SS$_VASFULL                    = 00000244
SS$_WASCLR                     = 00000001
SS$_WASSET                     = 00000009
START                            0000043C R     03
SYS$CONNECT                      ********  GX   03
SYS$CRETVA                       ********  GX   03
SYS$CRMPSC                       ********  GX   03
SYS$DELTVA                       ********  GX   03
SYS$DGBLSC                       ********  GX   03
SYS$EXIT                         ********  GX   03
SYS$EXPREG                       ********  GX   03
SYS$FAO                          ********   X   03
SYS$LKWSET                       ********  GX   03
SYS$OPEN                         ********  GX   03
SYS$PUT                          ********  GX   03
SYS$RESUME                       ********  GX   03
SYS$ULWSET                       ********  GX   03
TYPEMSGBUF                       00000C71 R     03
ULWSETERR                        000003F4 R     03
ULWSETERRADR                     00000196 R     03
ULWSETERRSIZ                   = 00000063
ULWSETSUBR                       00000B1D R     03

                                                +----------------+
                                                ! Psect synopsis !
                                                +----------------+

PSECT name                      Allocation          PSECT No.  Attributes
----------                      ----------          ---------  ----------
.  ABS  .                       00000000  (    0.)  00 (  0.)  NOPIC   USR   CON   ABS   LCL NOSHR NOEXE NORD  NOWRT NOVEC BYTE
$ABS$                           00000000  (    0.)  01 (  1.)  NOPIC   USR   CON   ABS   LCL NOSHR   EXE   RD    WRT NOVEC BYTE
DATA0                           0000017A  (  378.)  02 (  2.)  NOPIC   USR   CON   REL   LCL NOSHR NOEXE   RD    WRT NOVEC PAGE
CODE                            00000CAB  ( 3243.)  03 (  3.)  NOPIC   USR   CON   REL   LCL NOSHR   EXE   RD  NOWRT NOVEC PAGE

                                             +------------------------+
                                             ! Performance indicators !
                                             +------------------------+

Phase                    Page faults    CPU Time       Elapsed Time
-----                    -----------    --------       ------------
Initialization                    17    00:00:00.07    00:00:00.41
Command processing                87    00:00:00.83    00:00:04.66
Pass 1                           375    00:00:13.91    00:00:43.76
Symbol table sort                  0    00:00:01.26    00:00:04.53
Pass 2                           196    00:00:03.63    00:00:11.14
Symbol table output               18    00:00:00.13    00:00:00.14
Psect synopsis output              2    00:00:00.02    00:00:00.25
Cross-reference output             0    00:00:00.00    00:00:00.00
```

```
Assembler run totals             697      00:00:19.87     00:01:04.90

The working set limit was 1500 pages.
89826 bytes (176 pages) of virtual memory were used to buffer the intermediate code.
There were 50 pages of symbol table space allocated to hold 889 non-local and 18 local symbols.
794 source lines were read in Pass 1, producing 24 object records in Pass 2.
50 pages of virtual memory were used to define 42 macros.

                                 +----------------------------+
                                 ! Macro library statistics !
                                 +----------------------------+

Macro library name                         Macros defined
------------------                         --------------
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                         0
_$255$DUA28:[SYSLIB]STARLET.MLB;2                      30
TOTALS (all libraries)                                 30

1168 GETS were required to define 30 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:MMGLKWULW/OBJ=OBJ$:MMGLKWULW MSRC$:MMGLKWULW/UPDATE=(ENH$:MMGLKWULW)+EXECML$/LIB
```

0236 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY



MMGEXPCNT
LIS

MMGNSFWSL
LIS

MOM
MAP

MMGCRTDEL
LIS

MMGCRDLSP
LIS

MMGCRTFIL
LIS

MMGLKWULW
LIS

MMGXQUOTA
LIS

MMGSETPRT
LIS

MOM